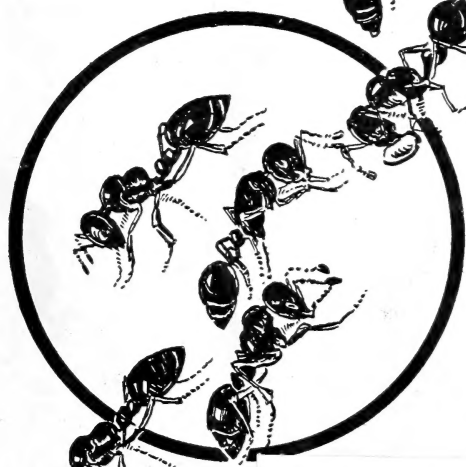


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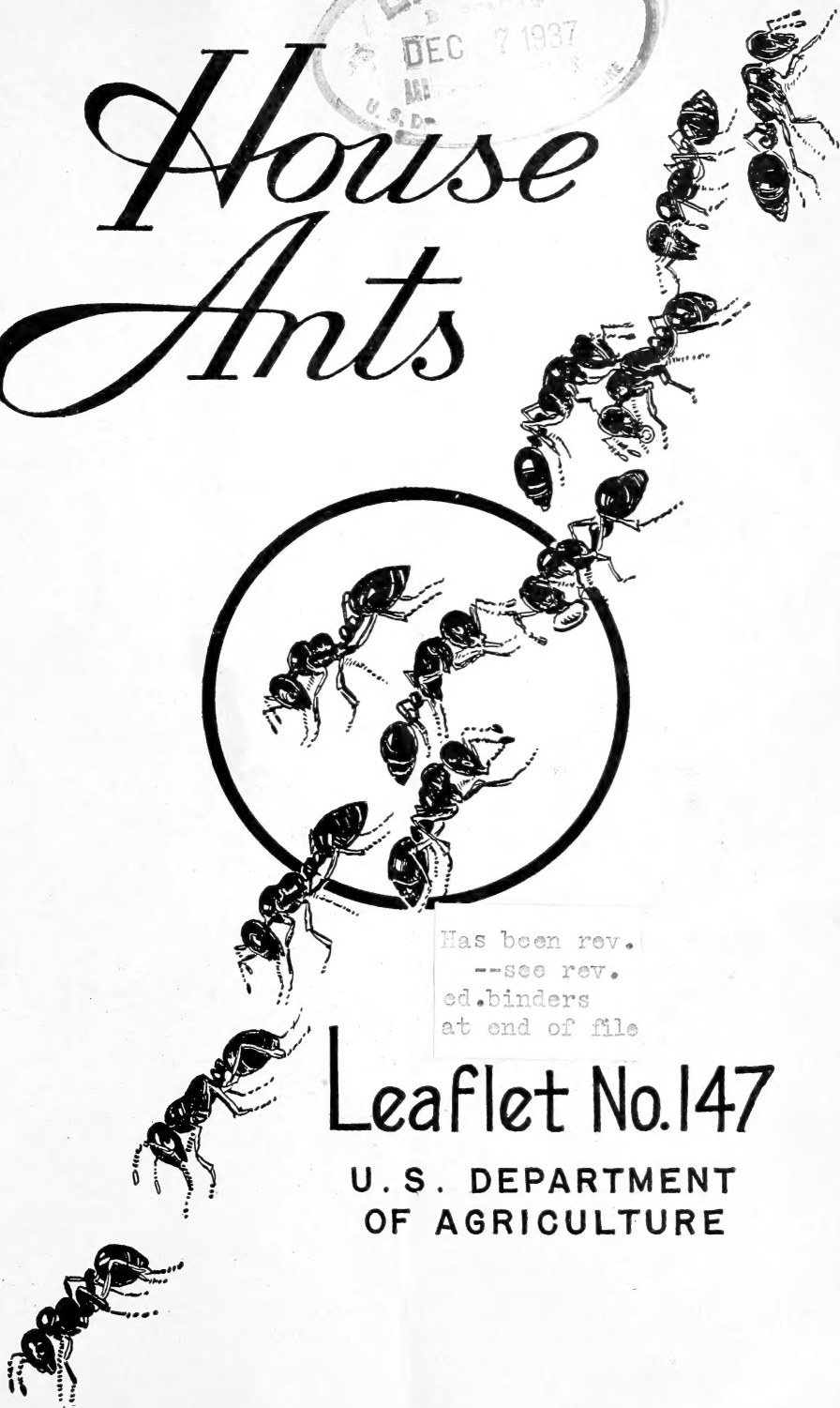
House Ants



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Leaflet No. 147

U. S. DEPARTMENT
OF AGRICULTURE



HOUSE ANTS

By E. A. BACK, *principal entomologist, Division of Insects Affecting Man and Animals, Bureau of Entomology and Plant Quarantine*

Several species of ants invade houses, getting into food supplies and otherwise annoying the occupants. They all form colonies or nests, in which remain the queen ants, which lay the eggs, and the young ants, which have to be fed by the worker ants. The workers are the ants that are found attacking foods and crawling about the house. They collect food and carry it back to the nest, where they feed it to the queens and the young. Killing some of these workers merely weakens the colony but does not affect the queens or the development of the young unless so many workers are killed that the colony's food supply is seriously reduced. In fighting ants, therefore, the secret of success is to locate and destroy the nests, including the queens and the young, for when this is done the other forms usually perish.

Ants With Wings

Every now and then, particularly late in the winter, in the spring, and early in the summer, ant colonies produce large numbers of winged

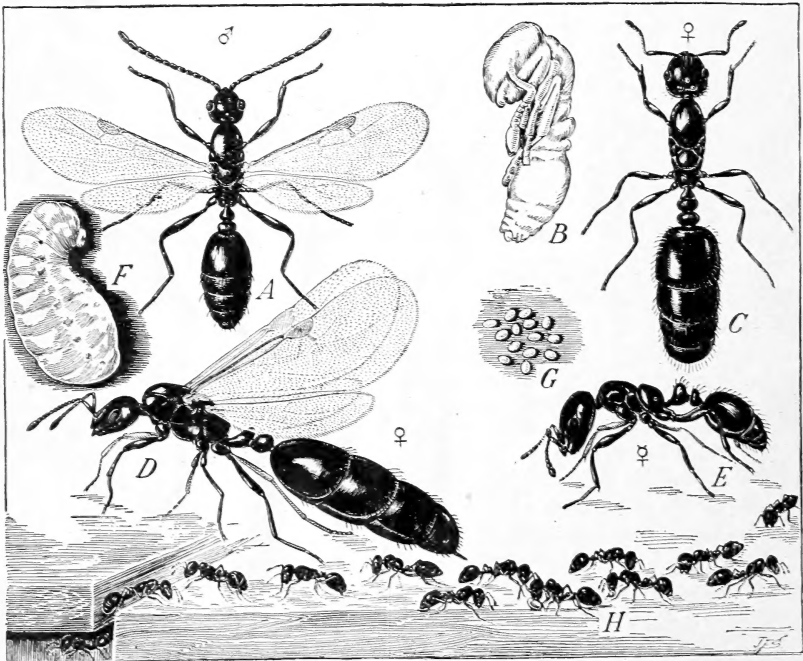


FIGURE 1.—The little black ant: A, Male; B, pupa; C, female; D, female with wings; E, worker; F, larva; G, eggs; H, group of workers in line of march. A to G much enlarged, H about 3 times natural size.

forms (fig. 1, A, D). These are the young queens and the males. They swarm from the old nest, usually in considerable numbers, and attract attention by their abundance. Most of them die without

causing injury; probably not 1 queen in 500 succeeds in establishing a new colony. These winged forms do not return to the old nest.

Ants Are Not Termites

Ants and termites are very distinct. They are alike in that they live in colonies and send forth at times swarms of winged forms. But worker termites are whitish, are never seen running freely about the house or yard; and are always hidden in their burrows in the wood-work. The wings of swarming queens and males of termites (fig. 2) are long, narrow, whitish, easily broken off, and about twice as long as the body itself. The wings of house ants (figs. 1, 3, 4) are not so narrow but taper more sharply toward the body, are transparent, are not shed so easily, and are not much longer than the body itself. Furthermore, ants can always be distinguished from termites because the abdomen (the hind part of the body) joins the thorax (the part bearing the wings) by a more or less threadlike constriction (fig. 1, A, C, D; fig. 3.), whereas the termite abdomen is not constricted at the base. Termites never cause sawdust to fall from infested wood as do some house ants. For easily observed differences in body and wing outline see figures 1, 2, 3, and 4.

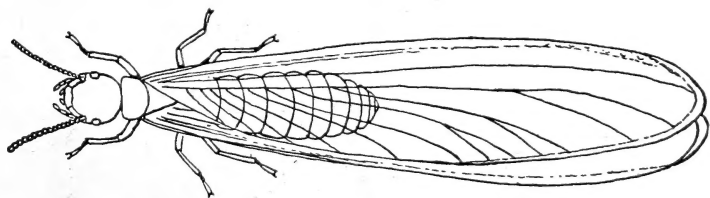


FIGURE 2.—Winged reproductive termite, ready for swarming. Much enlarged. This is the only form in which termites are commonly seen outside of their burrows.

The More Common Species

Pharaoh's ant (*Monomorium pharaonis* L.) is one of the most common and troublesome of house ants. It is a red ant and is so small that it is hard to see. In temperate regions it passes its entire existence in heated houses, forming its colonies beneath floors, in wall spaces, etc. It is best killed with poisoned baits made according to formula 1, 2, or 3, if powders, chemical barriers, or ant tapes are not used.

The large yellow ant (*Lasius interjectus* Mayr) is light yellow. During the winter and spring, in heated houses, the winged forms (which have dark-colored wings) are often found emerging from the soil through cracks in basement floors. Their colonies are best destroyed by means of carbon disulphide, hot water, or kerosene.

The little black ant (*Monomorium minimum* Buckley) (fig. 1) is, as its name implies, a tiny black species. It is often found nesting in decayed bits of wood in the house, and beneath garage and walk pavings, where it forms colonies in the soil. When it is found nesting in the house, use a poisoned bait for control; when out of doors, use carbon disulphide, hot water, or kerosene.

The thief ant (*Solenopsis molesta* Say) lives out of doors and is troublesome in houses only during the warmer seasons of the year. Its workers are tiny, yellowish, and even smaller than Pharaoh's ant.

In houses it feeds almost entirely upon greasy substances. It is best controlled by use of a poisoned bait (formula 5). If it is known where

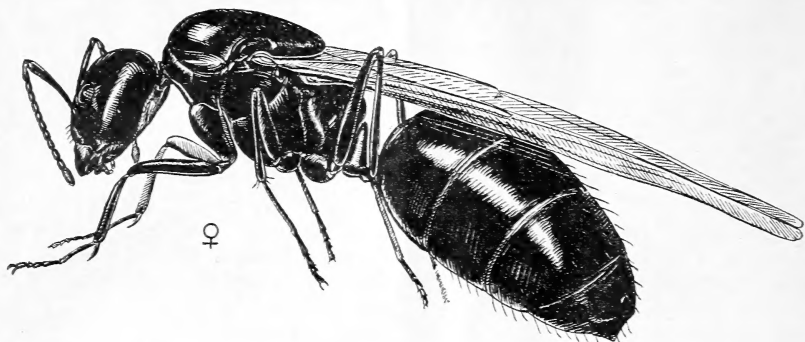


FIGURE 3.—Winged female of the large black, or carpenter, ant. About 5 times natural size.

the ants are coming from in the yard, the poison can be placed there and kept out of the house.

The pavement ant (*Tetramorium caespitum* L.), introduced from Europe, is well established along our Atlantic coast and builds its

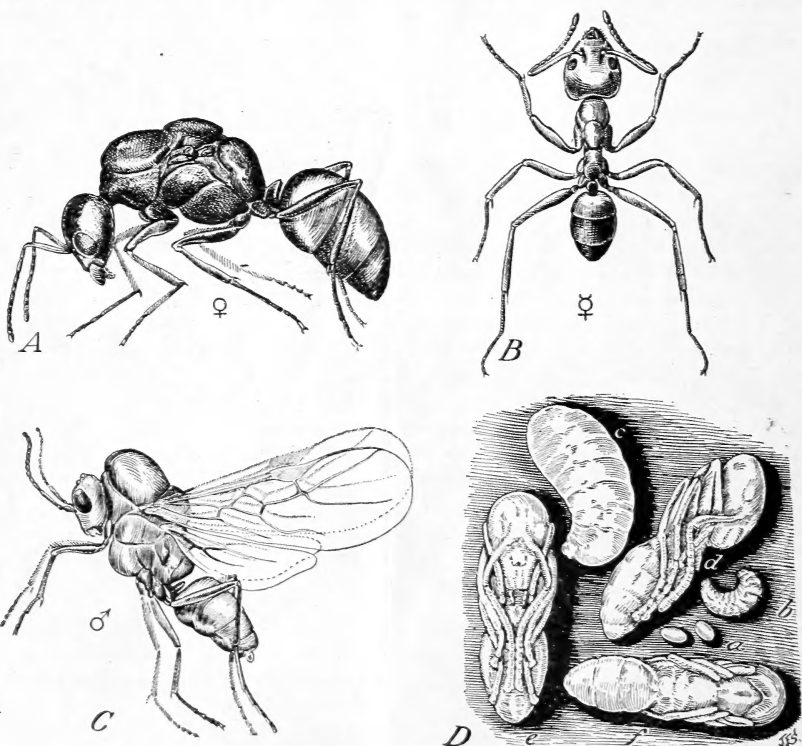


FIGURE 4.—The Argentine ant: *A*, Wingless female. *B*, Worker. *C*, Male. *D*, Immature stages: *a*, Eggs; *b*, young larva; *c*, full-grown larva; *d*, pupa, side view; *e*, pupa, ventral view; *f*, pupa, dorsal view. All about 12 times natural size.

ests beneath brick, stone, and cement pavings and from these situations finds its way into houses. The colonies are easily killed with

carbon disulphide (p. 5) or, if close to the surface beneath the paving, by means of hot water or kerosene, if the paving can be lifted. Carbon disulphide is excellent for pouring through cracks in cement areaways. Usually 1 or 2 teaspoonfuls will kill all the ants in the nest.

The large black ant (*Camponotus herculeanus pennsylvanicus* Deg.) (fig. 3) is often over half an inch long and attracts much attention. It is frequently called a carpenter ant because it builds burrows in decaying stumps, logs, and dead branches of trees close to houses. It even burrows in house timbers, but usually only in those already partially decayed or otherwise softened by exposure to weather or soil moisture. When in a timber of the house or porch, the ants drop bits of sawdust to the floor through small holes in their galleries in the wood. Kill them by injecting kerosene, orthodichlorobenzene, or carbon disulphide into the wood through these openings, or use a bait (formula 5). It may be desirable to replace the infested wood, for often it is already partially decayed from other causes.

The Argéntine ant (*Iridomyrmex pruinosus* Roger, var. *humilis* Mayr) (fig. 4), found throughout the South and in portions of California, greatly exceeds in destructiveness other species of ants and frequently overruns entire communities. Its nests almost anywhere, but usually outside the house. It is best controlled by a campaign of poisoning conducted by the community, during which a poisoned bait (formula 4) is exposed in perforated tin cans or waxed-paper bags. Often a few cans of poison attached to the foundations of a house and to tree trunks in the yard will free individual homes of this species.

Location of Colony or Nest

The nest of a house or lawn ant may be in any place offering protection. In the house it may be between floorings, in the walls, behind baseboards, in a decayed or defective timber, or in the soil beneath a cracked cement cellar floor. Out of doors the nest may be in dry-rotted porch supports or window sills, beneath brick or cement walks, beneath stones, in decaying logs, in cavities, or the softened interior of trees, or merely in the ground itself.

When a nest is in the woodwork of the house, the accumulation of sawdust which the ants drop from the infested piece of wood is usually ample evidence of its presence. Ordinarily ants in wood are not to be feared, as termites are, for they usually make their nests in wood already softened or decayed by seeping rainwater or other moisture and do not often attack thoroughly sound wood. The color of the sawdust dropped by the ants through holes in the infested piece indicates whether the wood is sound or not.

Control of Ants

Ideal ant control is based on the destruction of the queens and the young in the nest itself. If the nest can be found by following back along the line or trail of worker ants as they come to and go from food, it is not difficult to kill the colony, particularly if it is located, as it often is, out of doors, or in the soil beneath a cracked cement basement floor. If the worker ants are proceeding from a crack in the cement of the driveway, from between the bricks of a walk, or from a similar place, merely pour 1 or 2 tablespoonfuls of carbon disulphide down the crack and repeat this after 24 hours if necessary. (Carbon disulphide is a

liquid that can be purchased at drug or other stores. Upon exposure to air it evaporates, forming a gas that is heavier than air, so it will sink into soil and cracks. *This gas is explosive and inflammable in the presence of fire in any form, so keep matches, lighted cigars, cigarettes, etc., away while using it.*) Sometimes pouring boiling water into such cracks will kill the colony, but not if it is deep-seated. If the nest is in the soil of the lawn or garden, as indicated by the characteristic ant hills, make holes about a foot apart over the infested hill area with a broom handle, or similar object, to a depth of 2 to 4 inches and pour into each hole from 2 to 3 tablespoonfuls of carbon disulphide. Then close the holes at the surface by pushing the soil together. With large ant hills it may be necessary to make deeper holes and pour in more carbon disulphide. Place the liquid below the roots of the grass; otherwise the grass may be killed.

When nests are in the woodwork, find the small openings made by the ants, or, if the nest is close to the surface, make an opening into the ant galleries. Inject through these openings, by means of a pipette or small syringe, a teaspoonful or tablespoonful of carbon disulphide or orthodichlorobenzene, and then close the opening with a plug of plastic wood, putty, or similar material. As the ant burrows or galleries may be widely separated, it is desirable to make injections through all the openings to the exterior that can be located.

If it is suspected that the ant nest is near a certain point in the wall or floor, it may pay to inject a small amount of carbon disulphide or orthodichlorobenzene at that point, but this kind of treatment for nests in a building is likely to fail unless the exact location of the nest is determined. Ants often crawl considerable distances in wall and floor spaces from their nests to the point where they emerge into the room, and the colony is then too well protected to be killed by fumigation.

What to Do When the Colony Cannot Be Located

When colonies cannot be located without tearing out partitions, or going to other expense not warranted, the use of poisoned sirups, or baits, powders, sprays, or chemical barriers, is advocated. No one bait or sirup can be depended on to destroy all kinds of ants under varying conditions. Some ants will eat one poison and refuse another; some eat only sweets, while others eat only meats and grease.

Powders.—Sodium fluoride powder dusted about window sills, drainboards, foundations, and other places where ants crawl will often drive them away, but not always. If effective, it makes an easily applied and cheap control. *Sodium fluoride is a poison, so do not get it into food, and keep it away from children and pets.*

Chemical barriers.—Ants can be kept off tables, refrigerators, or other movable furniture of no particular value by placing the legs of the furniture in shallow dishes or small jars into which has been poured a small quantity of kerosene. Keep the surface of the kerosene free from dense accumulations of dead ants; otherwise live ants may use the bodies of those killed as a bridge to reach the legs of the furniture.

Ant tapes fastened about the legs of furniture will keep ants off and are cleaner than the kerosene containers. Prepare these tapes by boiling, for a short time, strips of bias cloth tape in a saturated solution of bichloride of mercury (corrosive sublimate). After boiling the strips, hang them up to dry, and later, as needed, wrap them about

the legs of furniture and tie firmly. *Corrosive sublimate is a poison; so be careful.*

Sprays.—The ordinary kerosene-pyrethrum sprays commonly on the market are excellent for killing ants actually hit by the spray. Sometimes spraying will keep ants away, but it is seldom that sprays can be depended on to kill a colony.

Poisoned baits.—Often resort must be had to poisoned baits, particularly when other methods fail. First remove, as far as possible, all foods from the places to which the ants have been coming and substitute a saucer or other dish containing a sponge kept moist by the poisoned sirup. The worker ants will feed upon the sirup, carry it back to the nest, and feed it to the queens and the young, and so poison the colony. Sometimes the poison container can be placed along the line of march followed by the ants rather than about the sink, pantry, or kitchen cabinet. *Care should be used to keep children and pets away from these baits.*

Another method of exposing baits is to use pill boxes cut as shown in figure 5. When the bait is prepared, pour it over strips of blotting paper, being careful to add only what will be absorbed easily. Place

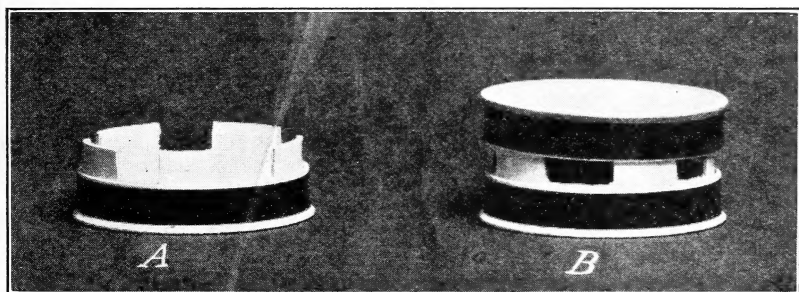


FIGURE 5.—Pill box for holding poisoned bait: A, Box with sides cut and cover removed; B, box ready for use

some of these poisoned strips, previously cut to fit the box, in the pill box, the interior of which has been paraffined, and put on the cover. When the boxes are ready to use, merely raise the covers enough to allow the ants room to enter. Tin boxes or other containers can be used instead of pill boxes.

The following formulas for poisoned baits have given good results, but no one formula can be relied on to destroy all kinds of ants under all conditions:

Formula 1.—Dissolve 4 ounces of sugar in 1 quart of water and stir in one-half ounce of tartar emetic.

Formula 2.—Dissolve one-half pound of sugar in 1 pint of hot water and add one-seventh ounce (62.5 grains) of sodium arsenate; bring to a slow boil and strain.

Formula 3.—An excellent bait is prepared by mixing 1 pint of water, 1 pound of granulated sugar, 27 grains of thallium sulphate, and 3 ounces of honey. After mixing thoroughly, bring to a slow boil and allow to cool. *Thallium sulphate is a dangerous poison and should be handled with special care. Do not breathe the vapors given off while the mixture is being heated.*

Formula 4.—Recommended particularly for the Argentine ant: (1) Mix 9 pounds of granulated sugar, 6 grams of crystallized tartaric acid, and 8.4 grams of benzoate of soda in 9 pints of water; boil the mixture slowly for 30 minutes and allow it to cool. (2) Dissolve 15 grams of sodium arsenite (C. P.) in one-half pint of hot water and allow to cool. Add (2) to (1) and stir well, then add 1½ pounds of strained honey and mix thoroughly.

Formula 5.—For ants that will not eat sweets but prefer grease and meat: Work small quantities of tartar emetic into grease or pieces of bacon rind.

Formula 6.—For control of large black carpenter ants: Mix 1 teaspoonful of paris green with one-half pound of chopped meat or hamburg steak. Cook the meat in a frying pan sufficiently to brown it slightly to delay decay. Granulate or pick it apart and place it in a tin box, with a tight-fitting cover, through which holes large enough for the entrance of the ants are punched. The box with poison should then be attached to a tree, log, porch rail, or wherever the ants forage.

Formula 7.—When lawns or gardens are covered with small ant hills, scatter broadcast a mixture of 1 ounce of paris green and 1 pound of brown sugar at the rate of 1 pound of the mixture per 10,000 square feet needing treatment. A second treatment is usually necessary after a period of 10 days. Scatter the mixture so finely divided that birds or pets will not pick it up.

Community Effort in Ant Control

When ants are very abundant throughout a city block or over a greater area, the best results are obtained by a community campaign directed by the local authorities on the advice of specialists familiar with ant control. Such campaigns have been very successful in the South in combating the Argentine ant and doubtless would prove useful for controlling other ants elsewhere. With certain species, individual effort at control is not effective, particularly if there are so many ants in the neighborhood that a single property is rapidly reinfested.